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May 31, 2013

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To Whom It May Concern:

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FINDING BALANCE: Fort leading the way on water conservation

By *Bill Hess*

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Beatrice Richardson • Herald/Review • Xeriscapes can be seen at Coronado Village on Fort Huachuca Monday.

FORT HUACHUCA — This southern Arizona Army post is a leader in water conservation, and there are hard figures to prove it, Fort Huachuca Garrison Commander Col. Dan McFarland said.

For years, fort officials have been engaged in water savings to ensure the post continues to be a place for not only the Army but for other military service missions, especially in the ever-growing area of technology-based systems, McFarland said during a recent interview with the Herald/Review.



There is no denying that in the past the fort used a lot of water, he said, noting in 1989 usage “actually peaked out over 3,200 acre feet.”

The actual figure was 3,207 acre feet. An acre foot consists of nearly 326,000 gallons of water.

In 2012, the amount of groundwater pumped on the post was 986 acre feet, which is about 70 percent less than the 1989 high.

“If you look at the 2,200 AF we have saved annually that’s over 725 million gallons a year,” the colonel said.

Getting to that savings has involved a lot of actions on the fort. And, where reclaimed water can be used instead of fresh groundwater, it’s being done.

As an example, the post’s golf course prior to 1989 used groundwater on its greens.

But after that year, reclaimed water was used and, even that amount, has been reduced as changes took the course “from being a complete lush green to a desert course,” McFarland said.

Reducing use of reclaimed water means more of it can be put back into the aquifer, the garrison commander said.

At the height, 1,450 AF a year of reclaimed water was being used and now it’s down to 245 AF, “... an 83 percent reduction,” McFarland said, adding “that’s pretty significant ... it’s substantial.”

Groundwater main issue

However, the main issue is groundwater pumping and that is where the emphasis of not only McFarland, but past garrison commanders has been for many years.

Some efforts may have saved only small amounts of water, but when added up, it is a significant savings.

Some of the figures he provided include:

- Installing 840 waterless urinals, which provides a savings of 103 AF a year.
- Installing low flow water fixtures, including toilets, shower heads and faucet aerators, for a reduction of 81 AF a year.
- Xeriscaping, which reduces high water using plants which saves 60 AF a year.

“Sixty acre feet doesn’t sound like a lot until you realize 60 AF is 18 million gallons a year,” the colonel said about xeriscaping on the post.

In the past, those residing on the post were generally allowed to water around their houses without much constraints. But now that has drastically changed.

“You still are allowed to do a certain amount of watering, but it’s based on a schedule ... based on smart use of water,” McFarland said.

The rules are don’t overuse water, don’t waste it, he said.

During the monsoon — the heavy summer rains — such watering is prohibited and for some other times there is no need to water either.

Generally, a family living on the fort is allowed to use a non-hand-held sprinkler two hours two days a week for two months of each year “but it can’t be left unattended .. you can’t pool up water,” McFarland said.

New homes, new technology

As for the newer homes on the fort, the outside of each one is primarily xeriscaped but there is a little patch of grass in the back yard. “About the size of this,” McFarland said as he pointed out an area in his office which was about the size covered by a sofa, two chairs and coffee table.

And watering the small patch is done automatically by a system which detects when watering is needed and then only enough is used to keep the grass alive.

Some people have expressed a desire to once again have a community garden area on the fort — which was ended some years ago because of high water use — but the garrison commander said he doesn’t see it happening.

"Until we can figure out a way to manage the flow of water, we can't do it. We just can't do it right now," McFarland said. "If we had technology which could turn things on and off at the right time, we may consider that, but right now we don't have it."

There is little water used for landscaping anymore, McFarland said.

Helping with the natural recharge program there are a number of recapture facilities on the fort to catch rainwater.

Such a place is the Barnes Field House roof, "where we can capture it and put it right into a storage tank and then we can recharge it," the colonel said.

There are other capture basins, such as ones on the East Range, which have the capacity to hold 400 AF for recharging purposes.

And, the post has engaged in many other water saving projects.

Artificial turf a favorite

"One of my favorites is the artificial turf. The artificial turf saves us about 32 AF a year of watering but it also cuts down maintenance costs and energy costs that are pretty substantial," the garrison commander said.

Artificial turf has replaced grass on a number of athletic fields on the post.

"Add all of that stuff up and we have pretty substantial savings," McFarland said.

However, the fort continues to look for more ways to save water.

Such action involves working with others, such as the Upper San Pedro Partnership (USSP), of which the fort is one of the founding members.

The partnership is a consortium of a number of federal, state and local government agencies, as well as non-governmental groups such as The Nature Conservancy and the National Audubon Society.

Being part of the partnership allows the fort to work as both a member of the group and with individual members on some issues, McFarland said.

The Nature Conservancy has worked with the fort in obtaining conservation easements, which put development restrictions on off-post properties.

Equally important is what the fort does to help the USSP, he said.

As an example, the post provided funds to the partnership for a mesquite mitigation project to help the water surface flow down to the San Pedro, the colonel said.

The partnership is currently working on completing the required National Environmental Policy Act process for the project.

The fort also has used the Army's Compatible Use Buffer Program to purchase water rights and by doing so has received more than 1,300 AF in credits.

Net zero since 2003

When all the conservation efforts to date are added up "we have been net zero on water since 2003 ... you add up all the credits we are actually 600 AF below our net zero target line on base," McFarland said. "We are only talking about what we do on base, plus the easement stuff we have."

However it doesn't mean water saving actions on the post are at an end.

Bringing Huachuca City effluent from that community to be treated at the fort's wastewater treatment plant and then recharging it into the aquifer will allow the post to have 100 to 150 AF worth of credit in its water conservation program, the colonel said.

The line connecting Huachuca City to the post is not completed but effluent flow is expected to start sometime this year.

"There's a plan to replace the swamp coolers with air conditioners," which will save an unknown amount of water, he said.

When it comes to water leaks, fixing them are a top priority to ensure there is no water waste. "We have a quick repair system that once a leak is identified instead of it going low on the priority list it's on the top of the priority list and they immediately get out there and fix it," he said.

The picture McFarland was painting is the fort is an excellent conservator of water.

The fort has received a number of awards, including a presidential honor for its water conservation efforts. (See info box which follows this article.)

Many of the efforts are to ensure the installation is in compliance with the federal Endangered Species Act. That's because some species on the post and off it depend on water flow, for which the post is partially responsible, McFarland said.

"If you go up where the (Huachuca water) umbels are (mostly in Upper Garden Canyon) it's where the spring pops out so there's not a lot of what we are doing that's going to prevent spring flow up there," he said. "It's when you get down lower that's part of the issue."

Environmental issues serious

For the colonel, the post has, is and will continue to take its environmental missions seriously.

And, it's not just conserving water it's also educating people who live and work on the fort, as well as ensuring military personnel and their families who live off the installation understand the importance of water conservation.

People coming to the fort receive, what he called Water 101, when they process in.

It helps new people to understand the critical importance of water conservation, McFarland said.

And, the water conservation message is also understood by military families who live in the community because of what is communicated to them when they arrive for duty on the fort, the colonel said, adding it also is received by military retirees in the off-post communities.

"If you talk to an active duty person or retiree downtown they know the message," he said.

And, if McFarland wasn't involved in the issue as the garrison commander, the message is brought home to him by his two sons, especially Conor, who attends Col. Smith Middle School on the post.

"Right now, he gets it from school, not to leave the faucet on and let it run. Everyone is pretty conscious here," the colonel said.

Water conservation is part of the accommodation school district's curriculum. The middle school, which was recently constructed, incorporates many environmental technologies, to include having in-ground tanks to capture rain runoff.

"All you have to do is go through a June when it's dry and hot to realize how precious water can be. Even the young kids can recognize that," McFarland said.

The message doesn't stop with the military.

What fort officials tell military personnel, also applies to any tenant activities on the fort, to include other Department of Defense organizations and other federal agencies which use post property.

"The message on Fort Huachuca is consistent with all the tenants," McFarland said. "We have standards when you build a facility that people will have to meet and that's pretty consistent. Even if we have a piece of property leased to another facility they have to still meet the same standard when they build that facility and we set the standards. And again low flow and things of that nature, are in essence, our building codes here."

Fort excellent stewards

The fort has been working on water savings for a long time.

"You can look at all the things we have done over the last 20 years — a lot of it done in the last decade — and it's fair to say Fort Huachuca is a good steward of the environment and as it relates to water in southeastern Arizona we are extremely good stewards," McFarland said.

And it happened one project at a time "when our post population increased by 40 percent we cut our water usage by more than 50 percent and that speaks for itself." But, it's not just the numbers "because quite honestly there's going to come a point where it is more difficult until technology comes in so we can become more efficient," the colonel said.

What also is important is the accomplishments when it comes to water conservation is “what we do for our missions and the impact on the economy and everything else, and when you look at the amount of positive impact we have on the community, in terms of providing jobs and everything else.”

He went on to say the fort’s efficiency in water use is by far one of the best in the state in per gallons of water used. “We’re leading the Army and we will continue to look at new ways to do it, while we balance the mission and the impact on the community,” he said.

His bottom line: “I think the bumper sticker is, ‘we are good stewards.’ ”

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